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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/635,824   | 08/06/2003  | Timothy J. Hogan     | TI-28996.1          | 7653             |
| 23494  | 7590        | 06/22/2004           | EXAMINER            |                  |
| TEXAS INSTRUMENTS INCORPORATED<br>P O BOX 655474, M/S 3999<br>DALLAS, TX 75265 |             |                      | VAN, QUANG T        |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 3742                |                  |

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/635,824

Applicant(s)

HOGAN ET AL.

Examiner

Quang T Van

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 13-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 8 is/are rejected.
- 7) ☒ Claim(s) 3-7 and 9-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 01/26/2004.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

***Election/Restrictions***

1. Applicant's election without traverse of Group I (claims 1-12) in the reply filed on April 15, 2004 is acknowledged. Non-elected claims 13-21 are withdrawn from consideration.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Koshimizu (US 6,162,323). Koshimizu discloses, figure 5, a plasma processing apparatus (700) comprising an upper grid plate (704); a lower grid plate (702); a grid plate gap (space between the upper and lower grid plates); said upper (704) and lower (702) grid plates supported at perimeter so as to be separated by said gap; wherein said gap separation between said upper and lower grid plates is made variable (col. 11, lines 24-25 and 38-41).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koshimizu (US 6,162,323) in view of Lee (US 5,453,305). Koshimizu discloses substantially all features of the claimed invention except said grid plates made of metal. Lee discloses a grid plate (122) made of metal (col. 9, lines 62-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Koshimizu a grid plate made of metal as taught by Lee in order to control the ions pass through holes of the grid plates.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koshimizu (US 6,162,323) in view of Lee (US 5,453,305) and further in view of Maher et al (US 5,248,371) cited by applicant. Koshimizu/Lee disclose substantially all features of the claimed invention except said grid plates with a series of variable diameter holes. Maher discloses a grid plate (90) with a series of variable diameter holes (figure 4A, col. 8, lines 52-53). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Koshimizu/Lee a grid plate with a series of variable diameter holes as taught by Maher in order to increase gas flow rate in the desired area.

7. Claims 3-7 and 9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not show or suggest said grid plate gap separation is made larger in a stepwise manner in the center portion of said grid plate assembly as

recited in claims 3-7; and said series of variable diameter holes increase in size from edge-to-center of said grid plates as recited in claims 9-12.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Balance et al (US 6,090,210) discloses a multi-zone gas flow control in a process chamber. Moslehi et al (US 5,453,124) discloses a programmable multizone fluid injector for use in single wafer semiconductor processing equipment.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T Van whose telephone number is 703-306-9162. The examiner can normally be reached on 8:00Am 7:00Pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 703-305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QV  
June 18, 2004



Quang T Van  
Primary Examiner  
Art Unit 3742